

**SME Development Fund (SDF)/
Dedicated Fund on Branding, Upgrading and Domestic Sales (BUD Fund)
(Organisation Support Programme) (OSP)**

Final Report on Approved Project

Project ref. no. : D14 004 008
Project title : An Enhancement Program on Operations of
Automobile Maintenance Industry to Cope with City
and Global Development
Period covered : From 01/07/15 to 30/09/17
(dd/mm/yy) (dd/mm/yy)

1. Project Details

(Please mark with "*" if any of the following project details is different from that in the project proposal appended to the project agreement.)

Project Summary (in about 150 words)

This project aims to provide the industry with detailed analysis, updated knowledge, feasible local solutions as well as work instructions and guide for enhancing their operations to cope with Hong Kong environmental, practitioner professionalism and city transportation and infrastructure development as well as global trend. Findings obtained from this program will also serve as a reference for future planning of other relevant vocational training institutions and industry supporting organisations.

Automobile maintenance service industry mainly covers 3 main categories listed as below.

- a. Automobile quick maintenance;
- b. Overall vehicle inspection, maintenance & repairing;
- c. Engine & critical mechanism maintenance;

Project Objective(s) (in about 80 words)

1. To conduct a comprehensive industry study and find out the solutions to current problems.
2. To formulate solutions for automobile maintenance service SMEs to enhance their capabilities to cope with city and global development which fits the trend of the industry, meet needs of the customers and feasible to implement under local environment and infrastructure.
3. To benchmark the technologies, operations and business model adopted by SMEs of advanced countries on automobile maintenance and closely related service through literature review and identify the technologies and business and model suitable for future development of local SMEs.
4. To enhance awareness and transfer knowledge on new regulations in relation to implementation of Euro Vehicle Emission Standards, new technologies on vehicle diagnosis and maintenance, overseas automobile maintenance business operations development trend, operations automation and working environment improvement to local practitioners
5. To understand the technical human resources development strategies and undertakings of advanced countries for practitioners of automobile maintenance and related industries, then formulate solutions to enhance professionalism of the sector and attract youngsters to join the industry.
6. To develop and disseminate feasible solutions that can be implemented locally and easy to understand work instructions for practitioners to follow, such that SMEs can be facilitated to upgrade their operations for compilation with latest environmental standard and technologies requirement

Grantee/Collaborating Organisation/Implementation Agent

Grantee : Federation of Automobile Services Industry Hong Kong Limited (FASHK)
Environmental Vehicle Repairers Association Limited
Hong Kong & Kowloon Rubber Tyres Commercial General Association Limited
Hong Kong Auto (Parts & Machinery) Association Limited
Hong Kong Left Hand Drive Motors Association Limited
Hong Kong Trucks Merchants Association Limited
Hong Kong Vehicle Repair Merchants Association Limited
Right Hand Drive Motors Association (Hong Kong) Limited
SAE (International) Hong Kong
Society of Operations Engineers (Hong Kong Region)
The Institute of The Motor Industry Hong Kong

Collaborating Organisation(s) : VTC

Implementation Agent(s) : Hong Kong Productivity Council

Key Personnel

	<u>Name</u>	<u>Company/Organisation</u>	<u>Tel No. & Fax No.</u>
Project Co-ordinator :	Prof. Jackson HO	香港汽車服務業聯會有限公司	27885625 & 31874543
Deputy Project Co-ordinator :	Dr. Ringo LEE	香港汽車服務業聯會有限公司	26255903 & 26255923

Project Period

	<u>Commencement Date</u> (day/month/year)	<u>Completion Date</u> (day/month/year)	<u>Project Duration</u> (No. of months)
As stated in project agreement	01/07/2015	31/12/2016	18
Revised (if applicable)	01/07/2015	30/09/2017	27

2. Summary of Project Results

Project Deliverables

(Please list out the project deliverables as stated in the project proposal appended to the project agreement and provide details related to the actual result achieved for each of them.)

	Project deliverable	Quantifiable target number (e.g. 100 participants)	Actual result achieved (e.g. 90 participants)	Reasons for not achieving the target, if applicable (e.g. The total number of registered participants was over 120. However, some of them did not show up eventually. Will strengthen promotion and try to make up for the shortfall in the following two seminars.)
a)	Implement in-depth operations evaluation for 30 SMEs under 3 main auto maintenance categories	30	30	
b)	Carry out benchmarking literature survey and technology study on operators of overseas countries with developed automobile maintenance service and automobile manufacturing industry	1 time	1 time	
c)	Promote symposium and seminars under the 4-day conference with advertisements on magazines, newsletters, websites and other media. Disseminate findings of literature survey and gap assessment on various publications and other media via advertisements.	17 advertisements	17 advertisements	
d)	Organize the 4-day conference with 1 one-day symposium and 3 one-day seminars in 2 separate time lots	1 four-day conference with a one-day symposium and 3 one-day seminars.	1 four-day conference with a one-day symposium and 3 one-day seminars. (212 participants joined the one-day symposium; 53 participants joined the Seminar on Maintenance Technologies and Operation Guidelines for compliance with EURO VI; 56 participants joined the Seminar on Latest Diagnosis	

			and Maintenance Technologies of Automobile Electronics Systems; 50 participants joined the Seminar on Automation in Automobile Maintenance and Operation Environment Enhancement)	
e)	Work on gap assessment, analysis and local solutions formulation. Conduct gap assessment in 9 SMEs engaged in automobile quick, overall and engine maintenance respectively.	9 SMEs	9 SMEs	
f)	Compile, print and disseminate hardcopy and electronic version of industry operations enhancement detailed solutions report	500 hardcopies + e-version	500 hardcopies + e-version	
g)	Compile, print and disseminate hardcopy and electronic version of work instruction guide	500 hardcopies + e-version	500 hardcopies + e-version.	
h)	Compile, produce, promote and disseminate operation video	1 video (15 minutes)	1 video (15 minutes)	
i)	Conduct 3 half-day workshops after assessment	3 times (70 participants each)	3 times (74 participants joined the Workshop on Euro VI and other environmental maintenance technologies; 70 participants joined the Workshop on Diagnosis & electronic control technologies for Japanese-made automobiles and automation in maintenance; 71 participants joined the Workshop on Diagnosis & electronic control technologies for European-made automobiles.)	

Details of the deliverables (e.g. date, duration, venue, speaker, topic discussed, etc.)

(Please list out in table format if necessary.)

- a) On-site in-depth operations evaluation were conducted among 30 SMEs under 3 main auto maintenance categories by the end of March 2016. Each evaluation lasted for 1-day including visits to the garage and interview with owner(s) and practitioner(s). Photos and questionnaires were also collected for analysis and compilation reports. Information on existing environmental issues, diagnosis, automation & automobile electronic control system maintenance technologies in use, management system, business operations, working environment, technical human resources & professionalism development of local SMEs engaged in automotive maintenance were collected and evaluated.
- b) Intensive literature review on environmental technologies, advanced diagnosis & maintenance technologies, business operations, automation technologies, operation environment, practitioners training, qualifications recognition system adopted by counterparts in Germany, Japan, USA, Britain, Singapore and Taiwan has been conducted and completed on May 2016. Good overseas practices and technologies that is applicable to local SMEs have been identified and introduced on the conference, gap assessment, detailed solutions report, work instruction guide and video under this project.
- c) 9 advertisements were published on the website of applicant while 8 advertisements were published on the website of collaborating organisation, Hong Kong Vehicle Repair Merchants Association for promotion of symposium, seminars, workshop, as well as the detailed solutions report under the project.
- d) A one-day symposium (1-day with 2 sessions in 2 nights) was organised on 31 Mar 2017 and 5 Apr 2017 respectively in Conference Hall under HKPC premises. 212 participants attended the symposium.
Seminar on Maintenance Technologies and Operation Guidelines for compliance with EURO VI (1-day with 2 sessions in 2 nights) was organised on 7 Apr 2017 and 9 May 2017 respectively in Theatre 1 under HKPC premises. 53 participants attended the seminar.
Seminar on Latest Diagnosis and Maintenance Technologies of Automobile Electronics Systems (1-day with 2 sessions in 2 nights) was organised on 15 Mar 2017 and 17 Mar 2017 respectively in Theatre 1 under HKPC premises. 56 participants attended this seminar.
Seminar on Automation in Automobile Maintenance and Operation Environment Enhancement (1-day with 2 sessions in 2 nights) was organised on 8 Jun 2017 and 15 Jun 2017 respectively in Theatre 1 under HKPC premises. 50 participants attended this seminar.
- e) 9 SMEs engaged in automobile quick, overall and engine maintenance were selected to conduct 4-day gap assessment and benchmarking by 3 overseas experts and HKPC consultants. The name of 9 SMEs are:
 - 友成汽車工程
 - 天怡有限公司
 - 永恆汽車服務
 - 車專業服務有限公司
 - 其士汽車服務中心有限公司
 - 忠誠汽車工程公司
 - 美聯汽車維修
 - 達安汽車工程有限公司
 - 興昌汽車公司The areas for assessment and benchmarking included:
 - Euro VI and other environmental maintenance technologies
 - Diagnosis & electronic control technologies for Japanese-made automobiles and automation in maintenance
 - Diagnosis & electronic control technologies for European-made automobiles with overseas expert
- f) 500 hardcopies of industry operations enhancement detailed solutions report were compiled on Aug 2017. The content comprises in-depth operations evaluation, overseas operations and technology benchmarking literature review, technological, operational and business knowledge transfer and gap analysis workshops summaries, case studies on gap assessment as well as feasible solutions that can be implemented in HK for operations upgrading of 3 main categories of automobile maintenance services. The electronic version was uploaded to the official homepage of FASHK for public access.
- g) 500 copies of work instructions guide comprises auto maintenance guidelines, methodologies, and techniques for fulfilling Euro VI and other latest environmental standards, latest automobile diagnosis and electronic control devices as well as enhancement on automation in operations and working environment were compiled on Aug 2017. The electronic version was uploaded to the official homepage of FASHK for public access.
- h) Around 15min operation video for demonstrating the steps and procedures for fulfilling the latest environmental standards (e.g. Euro VI), automobile diagnosis and electronic control devices, etc was produced.

- i) The workshop on Euro VI and other environmental maintenance technologies was organised on 6 Sep 2017 in Classroom 107 under HKPC premises. 74 participants attended the workshop.
The Workshop on Diagnosis & electronic control technologies for Japanese-made automobiles and automation in maintenance was organised on 27 Sep 2017 in Classroom 106 under HKPC premises. 70 participants attended the workshop.
The Workshop on Diagnosis & electronic control technologies for European-made automobiles was organised on 28 Sep 2017 in Classroom 126 under HKPC premises. 71 participants attended the workshop

Milestones (in chronological order)

(# Please indicate if the milestone is completed (C), deferred (D) or not achieved (N). If it is deferred, please indicate the revised completion date. For those milestones which are deferred or not achieved, please also provide the reasons under item 2.4.)

<u>Milestone</u> (as set out in the approved project proposal appended to the project agreement)	<u>Original target completion date</u>	<u>Revised completion date</u> (if applicable)	<u>Status</u> (C/D/N) #
Implement in-depth operations evaluation for 30 SMEs under 3 main auto maintenance categories	31/10/2015	31/03/2016	C
(a) Carry out benchmarking literature survey and technology study on operators of overseas countries with developed automobile maintenance service and automobile manufacturing industry	31/12/2015	31/05/2016	C
(b) Promote symposium and seminars under the 4-day conference with advertisements on magazines, newsletters, websites and other media.	01/06/2016	31/05/2017	C
(c) Disseminate findings of literature survey and gap assessment on various publications and other media via advertisements.			
(c) Organize the 4-day conference with 1 one-day symposium and 3 one-day seminars in 2 separate time lots	01/07/2016	30/08/2017	C
(d) Work on gap assessment, analysis and local solutions formulation. Conduct gap assessment in 9 SMEs engaged in automobile quick, overall and engine maintenance respectively.	01/06/2016	30/08/2017	C
(e) Compile, print and disseminate hardcopy and electronic version of industry operations enhancement detailed solutions report	01/01/2017	30/09/2017	C
(f) Compile, print and disseminate hardcopy and electronic version of work instruction guide	01/01/2017	30/09/2017	C
(g) Compile, produce, promote and disseminate operation video	01/01/2017	30/09/2017	C
(h) Conduct 3 half-day workshops after assessment	01/01/2017	30/09/2017	C
(i)			

Future Plan for Promoting the Project Deliverables (Nil if not applicable)

1. The project applicant, FASHK, continues to organise seminars on latest environmental standard of vehicles, environmental technologies for vehicle, maintenance diagnosis and electronic control systems on its own, as well as with HKPC and VTC to disseminate the technologies on self-finance basis.
 2. Automobile maintenance industry operations enhancement detailed solutions report and work instruction guide developed under the project is uploaded to website of the project applicant after project completion for public assess and acquirement of findings for formulating their own operation enhancement strategy.
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